

Notes from Integrative Medicine Conference , sponsored by Healthy Medicine Academy

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This was truly a conference of luminaries. It was an honor and privilege to be there in the company of integrative medicine stalwarts such as Dr. Dwight McKee, Dr. Barry Boyd and Dr. Baghat Aggarwal. Unfortunately I fell ill during the conference so did not have the opportunity to attend every session. These notes represent the sessions I was able to get to.

#### Donald Abrams, M.D.

The first speaker I heard was Dr. Donald Abrams, integrative oncologist at the UCSF Osher Center for Integrative Medicine. Dr. Abrams gave a broad overview of the areas of integrative oncology that he felt were priorities for further attention. Those were:

- Diet and cancer
- Stress and cancer
- Obesity and cancer

Interesting pearls that I gleaned from this presentation:

- Metformin shows great promise, not only in lowering glucose and enhancing insulin sensitivity, but also in killing cancer stem cells. Abrams warned that metformin depletes B12 stores in the body – if one is on metformin , they must be supplementing with exogenous B12 (HW note: injections are probably best in order to overcome any digestive/absorption issues present)
- Abrams feels that it is safe to eat soy while undergoing tamoxifen therapy
- Turmeric has multiple mechanisms of therapeutic activity; however, it may interfere with the action of cyclophosphamide and possibly doxorubicin
- Vit. D/calcitriol induces cancer cell differentiation, cell cycle arrest and apoptosis. It also potentiates the anti-tumor activity of taxanes, anthracyclines, alkylating agents and antimetabolites in vitro and in vivo. In other words, there are no restrictions on using Vit. D in conjunction with chemo (HW note: always use Vit. K2 with D to avoid hypercalcemia)
- On stress and cancer: not much evidence that stress directly causes cancer; but ample evidence that stress hormones can accelerate growth of established tumors

#### Jeanne Wallace, Ph.D.

Next up was Dr. Jeanne Wallace, a nutritionist with special expertise in brain tumors. She spoke on the topic of Nutritional and Botanical Strategies to address radioresistance and mitigate treatment side effects. She shared that is one opts for radiation treatment, it is important that the tumor be as well

oxygenated as possible. Tumor oxygenation is indicated by a robust hemoglobin level and is the strongest predictor of successful response to radiation treatment. In fact, a 20% increase in hemoglobin level may decrease tumor hypoxia by 30%. However, supplementation with iron is NOT the way to increase oxygenation, as iron can promote more aggressive disease. Good Hg boosting foods and herbs include leafy greens, microgreens (algae), beets, goji berries, sea buckthorn, jujube, lactoferrin, whey protein, astragalus, rhodiola and angelica.

Wallace also talked about keeping the blood flowing as smoothly as possible, which can be readily assessed by a measure of fibrinogen and/or d-Dimer. Survival rates correspond with lower viscosity. Some good viscosity reducing options include ginkgo biloba, fish oil, magnesium, selenium and nicotinamide. Ginkgo has the added advantage of also boosting circulation (RBC velocity).

Tumor lactate also correlates with reduced survival and increased rates of metastasis. Magnesium helps to reduce lactate.

In discussing the ketogenic diet, Wallace mentioned that the combination of radiation and ketogenic diet in animal models of glioma was highly successful. Underlying rationale is that carb restriction deprives cancer cells of glutathione.

Other pearls from this presentation:

- HIF – 1a (hypoxia inducible factor) is something we should work to control as it affects angiogenesis, apoptosis and invasion. High HIF1-expression correlates with poor locoregional control and increased risk of tumor-related mortality. Green tea, grape seed extract, panax ginseng and silybinin (milk thistle) all inhibit HIF-1.
- Jeanne thinks soy food (non-GMO) is safe but recommends against isolated isoflavones
- High antioxidant status BEFORE radiation and high oxidative stress DURING radiation have highest reduction of progression (80% as published in BMC Cancer journal 2009). They should no longer be in competition with one another.
- Some foods/supplements to deal with radiation side effects include: pycnogenol, calendula, curcumin, aloe vera gel, proteolytic enzymes, zinc, honey, selenium, berberine, fish oil, probiotics, Vit. A

#### Barry Boyd, M.D.

Dr. Barry Boyd is a medical oncologist at Greenwich Hospital and Director of Cancer Nutrition at Yale University. He spoke on the topic of Insulin and the IGF (Insulin Growth Factor) system. Boyd noted several studies that indicate that caloric restriction not only affects longevity, but also reduces cancer risk (HW note: these are all animal studies. In human epidemiological studies, short term caloric restriction actually *increased* breast cancer risk later in life). He also showed data that demonstrated increased cancer risk with increasing height, mediated through an increase in IGF1 (insulin growth factor) concentrations.

Boyd reiterated the results of hundreds of studies that show the obesity/hyperinsulinemia/inflammation cancer risk, but pointed out that hyperinsulinemia and inflammation can exist *independent* of obesity. We cannot assume to be normal glycemic just because our BMI is normal.

There are numerous ways to influence the IGF signaling pathway: calorie restriction is one. Metformin is another, and ketogenic diets are a third way. However, Dr. Boyd believes that metformin only helps those who are hyperglycemic, and could be detrimental to those who are normal glycemic (as indicated by Ki 67 score) (HW note: some practitioners feel the Ki 67 score is an extremely unreliable indicator).

Other takeaways from Dr. Boyd:

- C-peptide is an important biomarker for survival (used to monitor insulin production primarily in diabetics); also fasting glucose and insulin, beta hydroxyl butyrate (measure of ketone bodies)
- Conventional cancer treatment *causes* metabolic syndrome (HW note: large part of supporting those in chemotherapy is to manage blood sugar, insulin and inflammation levels)
- In prostate cancer, beginning an exercise program at diagnosis reduces mortality in half
- Stress raises cortisol levels, which in turn raise glucose and insulin levels

Robert Zieve, M.D.

Dr. Zieve brought us up to date on some of the newer conventional and non-conventional treatment techniques. This was an overview presentation.

New approaches to radiation:

- IMRT – Intensity Modified Radiation Therapy: uses advanced technology to manipulate beams of radiation to conform to the shape of a tumor.
- Stereotactic radiosurgery (CyberKnife, Gamma Knife)
- Proton beam radiation therapy: kills tumor cells but does not damage nearby tissues
- Radioimmunotherapy: radioactive substance linked to antibody to locate and kill tumor cells
- Brachytherapy: also known as **internal radiotherapy**, **sealed source radiotherapy**, **curietherapy** or **endocurietherapy**, is a form of [radiotherapy](#) where a [radiation source](#) is placed inside or next to the area requiring treatment

Chemotherapy approaches:

- Metronomic chemotherapy
- Labs for chemosensitivity testing

Targeted therapies aka “smart bombs”:

- EGFR inhibitors
- Her2neu inhibitors

- Rituximab (monoclonal antibody against the protein CD20)

Also:

- Anti-angiogenic (eg. Avastin)
- Photodynamic therapy: drugs become active when exposed to light
- Apoptotic and epigenetic therapies
  - Intelligently applied nutrients and botanicals
  - Low-dose IPT

The cocktail approach to treatment:

- Dynamic and simultaneous use of diverse agents in different ways. Cocktail approach includes drugs, TCM, homeopathy, herbs, nutrients, diet, mind-body approaches.
- Examples: Cimetidine, heparin, metformin, antifungals (prostate cancer), nospapine (antitussive – lung cancer)

2013: time to expand our thinking in cancer medicine and care. “Integrative Cancer Medicine can transform health care in the US and the world, as can Integrative Medicine.”

#### Bharat Aggarwal, Ph.D

Dr. Aggarwal is a Professor of Cancer Research at Univ. of Texas M.D. Anderson Cancer Center, investigating lifestyle factors that influence cancer risk. His primary emphasis is on the botanical curcumin (derived from the spice turmeric). He presented his two major hypotheses:

- Dysregulated chronic inflammation caused by lifestyle factors mediate chronic diseases including cancer, and
- NF-Kappa B (a transcription factor) activation is a major mediator of inflammation in most chronic diseases (including cancer) and inhibition of NF-kB can prevent/delay the onset of chronic disease

Specifically, NFk-B regulates genes involved in proliferation, invasion and metastasis, bone loss, angiogenesis, and survival and chemoresistance. Activation of NFk-B has been linked with most cancers. Diet and stress are most potent activators of NFk-B.

A key inflammatory cytokine that is downstream from NFk-B is TNF (tumor necrosis factor). TNF blockers are a multi-billion dollar business, but Aggarwal believes that curcumin is an exceptional blocker of TNF and other pro-inflammatory biomarkers. It is also a chemosensitizer and radiosensitizer for tumors and chemoprotector and radioprotector for normal organs. Baggarwal showed the results of several clinical trials that validate his hypotheses. One particularly impressive trial involved advanced pancreatic cancer, where 800 mgs. of curcumin had a dramatically higher response rate than standard chemotherapy drugs. To date, more than 65 human clinical trials of curcumin have been conducted,

which included more than 1000 patients, and as many as 35 more clinical trials are underway. Curcumin works synergistically with resveratrol, green tea, quercetin, piperine and genistein.

Other spices with similar types of activity include capsaicin (red chilli), ginger, black cumin, fenugreek, fennel, cardamom, cinnamon, black pepper and long pepper.

Aggarwal has written two books on the healing power of spices: Healing Spices and Molecular Targets and Therapeutic Uses of Spices.